



IFWO

RAW SEQUENCE LISTING

DATE: 09/29/2004

PATENT APPLICATION: US/10/763,042

TIME: 11:42:05

Input Set : A:\08919-099001.TXT

Output Set: N:\CRF4\09292004\J763042.raw

4 <110> APPLICANT: Shaw , Jei-Fu
 5 Lai, Chia-Ping
 8 <120> TITLE OF INVENTION: PLANT TUBBY-LIKE PROTEINS
 11 <130> FILE REFERENCE: 08919-099001
 13 <140> CURRENT APPLICATION NUMBER: US 10/763,042
 14 <141> CURRENT FILING DATE: 2004-01-21
 16 <150> PRIOR APPLICATION NUMBER: US 60/441,380
 17 <151> PRIOR FILING DATE: 2004-01-21
 19 <160> NUMBER OF SEQ ID NOS: 48
 21 <170> SOFTWARE: FastSEQ for Windows Version 4.0
 23 <210> SEQ ID NO: 1
 24 <211> LENGTH: 450
 25 <212> TYPE: PRT
 26 <213> ORGANISM: Arabidopsis sp.
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 30 1 5 10 15
 31 Leu Ser Arg Arg Ser Phe Asp Phe Lys Leu Ser Ser Leu Asn Lys Glu
 32 20 25 30
 33 Gly Gly Lys Ser Arg Gly Ser Val Gln Asp Ser His Glu Glu Gln Leu
 34 35 40 45
 35 Val Val Thr Ile Gln Glu Thr Pro Trp Ala Asn Leu Pro Pro Glu Leu
 36 50 55 60
 37 Leu Arg Asp Val Ile Lys Arg Leu Glu Glu Ser Glu Ser Val Trp Pro
 38 65 70 75 80
 39 Ala Arg Arg His Val Val Ala Cys Ala Ser Val Cys Arg Ser Trp Arg
 40 85 90 95
 41 Asp Met Cys Lys Glu Ile Val Gln Ser Pro Glu Leu Ser Gly Lys Ile
 42 100 105 110
 43 Thr Phe Pro Val Ser Leu Lys Gln Pro Gly Pro Arg Asp Ala Thr Met
 44 115 120 125
 45 Gln Cys Phe Ile Lys Arg Asp Lys Ser Asn Leu Thr Tyr His Leu Tyr
 46 130 135 140
 47 Leu Cys Leu Ser Pro Ala Leu Leu Val Glu Asn Gly Lys Phe Leu Leu
 48 145 150 155 160
 49 Ser Ala Lys Arg Ile Arg Arg Thr Thr Tyr Thr Glu Tyr Val Ile Ser
 50 165 170 175
 51 Met His Ala Asp Thr Ile Ser Arg Ser Ser Asn Thr Tyr Ile Gly Lys
 52 180 185 190
 53 Ile Arg Ser Asn Phe Leu Gly Thr Lys Phe Ile Ile Tyr Asp Thr Gln
 54 195 200 205
 55 Pro Ala Tyr Asn Ser Asn Ile Ala Arg Ala Val Gln Pro Val Gly Leu
 56 210 215 220



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57 Ser Arg Arg Phe Tyr Ser Lys Arg Val Ser Pro Lys Val Pro Ser Gly
58 225                230                235                240
59 Ser Tyr Lys Ile Ala Gln Val Ser Tyr Glu Leu Asn Val Leu Gly Thr
60                245                250                255
61 Arg Gly Pro Arg Arg Met His Cys Ala Met Asn Ser Ile Pro Ala Ser
62                260                265                270
63 Ser Leu Ala Glu Gly Gly Thr Val Pro Gly Gln Pro Asp Ile Ile Val
64                275                280                285
65 Pro Arg Ser Ile Leu Asp Glu Ser Phe Arg Ser Ile Thr Ser Ser Ser
66 290                295                300
67 Ser Arg Lys Ile Thr Tyr Asp Tyr Ser Asn Asp Phe Ser Ser Ala Arg
68 305                310                315                320
69 Phe Ser Asp Ile Leu Gly Pro Leu Ser Glu Asp Gln Glu Val Val Leu
70                325                330                335
71 Glu Glu Gly Lys Glu Arg Asn Ser Pro Pro Leu Val Leu Lys Asn Lys
72                340                345                350
73 Pro Pro Arg Trp His Glu Gln Leu Gln Cys Trp Cys Leu Asn Phe Arg
74                355                360                365
75 Gly Arg Val Thr Val Ala Ser Val Lys Asn Phe Gln Leu Ile Ala Ala
76 370                375                380
77 Asn Gln Pro Gln Pro Gln Pro Gln Pro Gln Pro Gln Pro Gln Pro Leu
78 385                390                395                400
79 Thr Gln Pro Gln Pro Ser Gly Gln Thr Asp Gly Pro Asp Lys Ile Ile
80                405                410                415
81 Leu Gln Phe Gly Lys Val Gly Lys Asp Met Phe Thr Met Asp Phe Arg
82                420                425                430
83 Tyr Pro Leu Ser Ala Phe Gln Ala Phe Ala Ile Cys Leu Ser Ser Phe
84                435                440                445
85 Asp Thr
86 450
88 <210> SEQ ID NO: 2
89 <211> LENGTH: 394
90 <212> TYPE: PRT
91 <213> ORGANISM: Arabidopsis sp.
93 <400> SEQUENCE: 2
94 Met Ser Leu Lys Ser Ile Leu Arg Asp Leu Lys Glu Val Arg Asp Gly
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96 Leu Gly Gly Ile Ser Lys Arg Ser Trp Ser Lys Ser Ser His Ile Ala
97                20                25                30
98 Pro Asp Gln Thr Thr Pro Pro Leu Asp Asn Ile Pro Gln Ser Pro Trp
99 35                40                45
100 Ala Ser Leu Pro Pro Glu Leu Leu His Asp Ile Ile Trp Arg Val Glu
101 50                55                60
102 Glu Ser Glu Thr Ala Trp Pro Ala Arg Ala Ala Val Val Ser Cys Ala
103 65                70                75                80
104 Ser Val Cys Lys Ser Trp Arg Gly Ile Thr Met Glu Ile Val Arg Ile
105                85                90                95
106 Pro Glu Gln Cys Gly Lys Leu Thr Phe Pro Ile Ser Leu Lys Gln Pro
107                100                105                110

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108 Gly Pro Arg Asp Ser Pro Ile Gln Cys Phe Ile Lys Arg Asn Arg Ala
109           115           120           125
110 Thr Ala Thr Tyr Ile Leu Tyr Tyr Gly Leu Met Pro Ser Glu Thr Glu
111       130           135           140
112 Asn Asp Lys Leu Leu Leu Ala Ala Arg Arg Ile Arg Arg Ala Thr Cys
113 145           150           155           160
114 Thr Asp Phe Ile Ile Ser Leu Ser Ala Lys Asn Phe Ser Arg Ser Ser
115           165           170           175
116 Ser Thr Tyr Val Gly Lys Leu Arg Ser Gly Phe Leu Gly Thr Lys Phe
117           180           185           190
118 Thr Ile Tyr Asp Asn Gln Thr Ala Ser Ser Thr Ala Gln Ala Gln Pro
119       195           200           205
120 Asn Arg Arg Leu His Pro Lys Gln Ala Ala Pro Lys Leu Pro Thr Asn
121       210           215           220
122 Ser Ser Thr Val Gly Asn Ile Thr Tyr Glu Leu Asn Val Leu Arg Thr
123 225           230           235           240
124 Arg Gly Pro Arg Arg Met His Cys Ala Met Asp Ser Ile Pro Leu Ser
125           245           250           255
126 Ser Val Ile Ala Glu Pro Ser Val Val Gln Gly Ile Glu Glu Glu Val
127           260           265           270
128 Ser Ser Ser Pro Ser Pro Lys Gly Glu Thr Ile Thr Thr Asp Lys Glu
129           275           280           285
130 Ile Pro Asp Asn Ser Pro Ser Leu Arg Asp Gln Pro Leu Val Leu Lys
131       290           295           300
132 Asn Lys Ser Pro Arg Trp His Glu Gln Leu Gln Cys Trp Cys Leu Asn
133 305           310           315           320
134 Phe Lys Gly Arg Val Thr Val Ala Ser Val Lys Asn Phe Gln Leu Val
135           325           330           335
136 Ala Glu Ile Asp Ala Ser Leu Asp Ala Pro Pro Glu Glu His Glu Arg
137           340           345           350
138 Val Ile Leu Gln Phe Gly Lys Ile Gly Lys Asp Ile Phe Thr Met Asp
139           355           360           365
140 Tyr Arg Tyr Pro Leu Ser Ala Phe Gln Ala Phe Ala Ile Cys Ile Ser
141       370           375           380
142 Ser Phe Asp Thr Lys Pro Ala Cys Glu Gly
143 385           390
145 <210> SEQ ID NO: 3
146 <211> LENGTH: 406
147 <212> TYPE: PRT
148 <213> ORGANISM: Arabidopsis sp.
150 <400> SEQUENCE: 3
151 Met Ser Phe Lys Ser Leu Ile Gln Asp Met Arg Gly Glu Leu Gly Ser
152 1           5           10           15
153 Ile Ser Arg Lys Gly Phe Asp Val Arg Phe Gly Tyr Gly Arg Ser Arg
154       20           25           30
155 Ser Gln Arg Val Val Gln Asp Thr Ser Val Pro Val Asp Ala Phe Lys
156           35           40           45
157 Gln Ser Cys Trp Ala Ser Met Pro Pro Glu Leu Leu Arg Asp Val Leu
158       50           55           60

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159 Met Arg Ile Glu Gln Ser Glu Asp Thr Trp Pro Ser Arg Lys Asn Val
160 65 70 75 80
161 Val Ser Cys Ala Gly Val Cys Arg Asn Trp Arg Glu Ile Val Lys Glu
162 85 90 95
163 Ile Val Arg Val Pro Glu Leu Ser Ser Lys Leu Thr Phe Pro Ile Ser
164 100 105 110
165 Leu Lys Gln Pro Gly Pro Arg Gly Ser Leu Val Gln Cys Tyr Ile Met
166 115 120 125
167 Arg Asn Arg Ser Asn Gln Thr Tyr Tyr Leu Tyr Leu Gly Leu Asn Gln
168 130 135 140
169 Ala Ala Ser Asn Asp Asp Gly Lys Phe Leu Leu Ala Ala Lys Arg Phe
170 145 150 155 160
171 Arg Arg Pro Thr Cys Thr Asp Tyr Ile Ile Ser Leu Asn Cys Asp Asp
172 165 170 175
173 Val Ser Arg Gly Ser Asn Thr Tyr Ile Gly Lys Leu Arg Ser Asn Phe
174 180 185 190
175 Leu Gly Thr Lys Phe Thr Val Tyr Asp Ala Gln Pro Thr Asn Pro Gly
176 195 200 205
177 Thr Gln Val Thr Arg Thr Arg Ser Ser Arg Leu Leu Ser Leu Lys Gln
178 210 215 220
179 Val Ser Pro Arg Ile Pro Ser Gly Asn Tyr Pro Val Ala His Ile Ser
180 225 230 235 240
181 Tyr Glu Leu Asn Val Leu Gly Ser Arg Gly Pro Arg Arg Met Gln Cys
182 245 250 255
183 Val Met Asp Ala Ile Pro Ala Ser Ala Val Glu Pro Gly Gly Thr Ala
184 260 265 270
185 Pro Thr Gln Thr Glu Leu Val His Ser Asn Leu Asp Ser Phe Pro Ser
186 275 280 285
187 Phe Ser Phe Phe Arg Ser Lys Ser Ile Arg Ala Glu Ser Leu Pro Ser
188 290 295 300
189 Gly Pro Ser Ser Ala Ala Gln Lys Glu Gly Leu Leu Val Leu Lys Asn
190 305 310 315 320
191 Lys Ala Pro Arg Trp His Glu Gln Leu Gln Cys Trp Cys Leu Asn Phe
192 325 330 335
193 Asn Gly Arg Val Thr Val Ala Ser Val Lys Asn Phe Gln Leu Val Ala
194 340 345 350
195 Ala Pro Glu Asn Gly Pro Ala Gly Pro Glu His Glu Asn Val Ile Leu
196 355 360 365
197 Gln Phe Gly Lys Val Gly Lys Asp Val Phe Thr Met Asp Tyr Gln Tyr
198 370 375 380
199 Pro Ile Ser Ala Phe Gln Ala Phe Thr Ile Cys Leu Ser Ser Phe Asp
200 385 390 395 400
201 Thr Lys Ile Ala Cys Glu
202 405
204 <210> SEQ ID NO: 4
205 <211> LENGTH: 265
206 <212> TYPE: PRT
207 <213> ORGANISM: Arabidopsis sp.
209 <400> SEQUENCE: 4

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```

210 Met Pro Pro Glu Leu Leu Arg Asp Val Leu Met Arg Ile Glu Arg Ser
211 1 5 10 15
212 Glu Asp Thr Trp Pro Ser Arg Lys Asn Val Val Ser Cys Val Gly Val
213 20 25 30
214 Cys Lys Asn Trp Arg Gln Ile Phe Lys Glu Ile Val Asn Val Pro Glu
215 35 40 45
216 Val Ser Ser Lys Phe Thr Phe Pro Ile Ser Leu Lys Gln Pro Gly Pro
217 50 55 60
218 Gly Gly Ser Leu Val Gln Cys Tyr Val Lys Arg Asn Arg Ser Asn Gln
219 65 70 75 80
220 Thr Phe Tyr Leu Tyr Leu Gly Gly Glu Ala Lys Ile Phe Cys Gln Ser
221 85 90 95
222 Glu Pro Ser Asp Ile Tyr Leu Val Pro Tyr Ser Tyr Arg Glu Thr His
223 100 105 110
224 Cys Val Met Asp Ala Ile Ser Ala Ser Ala Val Lys Pro Gly Gly Thr
225 115 120 125
226 Ala Thr Thr Gln Thr Glu Leu Asp Asn Phe Val Ser Phe Arg Ser Pro
227 130 135 140
228 Ser Gly Gln Lys Glu Gly Val Leu Val Leu Lys Ser Lys Val Pro Arg
229 145 150 155 160
230 Leu Glu Glu Gln Ser Trp Cys Leu Asp Phe Asn Gly Ser Pro Glu Asn
231 165 170 175
232 Glu Pro Glu Asn Glu Asn Asp Ile Phe Gln Phe Ala Lys Val Gly Asn
233 180 185 190
234 Leu His Lys Leu Phe Ser Leu Tyr Glu Ala Glu Trp Ile Pro Leu Val
235 195 200 205
236 Arg Thr Ser Val Phe Ala Val Ile Ala Arg Val Cys Arg Asp Lys Lys
237 210 215 220
238 His Thr Pro Ser Tyr Glu Leu Lys Leu Ala Leu Tyr Phe Ala Lys Asn
239 225 230 235 240
240 Ser Ala Ile Leu Lys Lys Phe Val Leu Arg Gly Tyr Thr Arg Glu Glu
241 245 250 255
242 Asp Leu Leu Ala Leu Pro Val Ala Asn
243 260 265
245 <210> SEQ ID NO: 5
246 <211> LENGTH: 429
247 <212> TYPE: PRT
248 <213> ORGANISM: Arabidopsis sp.
250 <400> SEQUENCE: 5
251 Met Ser Phe Leu Ser Ile Val Arg Asp Val Arg Asp Thr Val Gly Ser
252 1 5 10 15
253 Phe Ser Arg Arg Ser Phe Asp Val Arg Val Ser Asn Gly Thr Thr His
254 20 25 30
255 Gln Arg Ser Lys Ser His Gly Val Glu Ala His Ile Glu Asp Leu Ile
256 35 40 45
257 Val Ile Lys Asn Thr Arg Trp Ala Asn Leu Pro Ala Ala Leu Leu Arg
258 50 55 60
259 Asp Val Met Lys Lys Leu Asp Glu Ser Glu Ser Thr Trp Pro Ala Arg
260 65 70 75 80

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VERIFICATION SUMMARY

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Input Set : A:\08919-099001.TXT

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